Appl. No.: 10/632,377
Amdt. dated 07/01/2005
Reply to Office Action of April 1, 2005

Amendments to the Claims:

1. (previously amended) A method for detecting the presence of stem cells in a population of cells comprising contacting said population of cells with a detectable substrate for aldehyde dehydrogenase (ALDH) under conditions such that ALDH present in cells of said population converts said substrate to a detectable product that is retained by said cells present in said population, wherein said stem cells have a higher concentration of said detectable product than non-stem cells present in said population wherein said substrate is BODIPY aminoacetaldehyde (BAAA).

2. (original) The method according to claim 1 wherein said population of cells is a human population of cells.

3. (original) The method according to claim 1 wherein said population of cells is derived from umbilical cord blood, bone marrow, peripheral blood or fetal liver.

4. (cancelled)

5. (cancelled)

6. (previously amended) The method according to claim 1 wherein efflux of said converted substrate from cells of said population is inhibited by exposing said population of cells to a multiple drug resistance (MDR) inhibitor.

7. (original) The method according to claim 6 wherein said MDR inhibitor is verapamil.

8. (original) The method according to claim 6 wherein said MDR inhibitor is added to cells of said population simultaneously with or prior to addition of said substrate.

9. (cancelled)

10. (cancelled)

11. (cancelled)

12. (previously amended) A method of detecting cells present in a population of cells that comprise an elevated level of ALDH comprising contacting said population of cells with a substrate for ALDH bearing a detectable label that is converted to a detectable product that is retained by cells of said population and determining which of said cells of said population have an elevated concentration of detectable product relative to other cells of said population, said cells of said population having said elevated concentration of detectable product being said cells having an elevated level of ALDH wherein said substrate is BODIPY aminoacetaldehyde (BAAA).

13. (original) The method according to claim 12 wherein said cells of said population having an elevated level of ALDH are tumor cells.

14. (previously amended) A method of isolating stem cells present in a population of cells comprising contacting said population of cells with a detectable substrate for aldehyde dehydrogenase (ALDH) under conditions such that ALDH present in cells of said population converts said substrate to a detectable product that is retained by said cells present in said population, wherein said stem cells have a higher concentration of said detectable product than non-stem cells present in said population, and separating said stem cells from said non-stem cells of said population on the basis of said higher concentration of detectable product wherein said substrate is BODIPY aminoacetaldehyde (BAAA).

15. (original) The method according to claim 14 wherein said population of cells is a human population of cells.

16. (cancelled)

17. (cancelled)

18. (previously amended) The method according to claim 14 wherein efflux of said converted substrate from said stem cells is inhibited by exposing said population of cells to a multiple drug resistance (MDR) inhibitor.

19. (original) The method according to claim 18 wherein said MDR inhibitor is verapamil.

20. (new) The method of claim 1, wherein said population of cells is from a source selected from the group consisting of umbilical cord blood, bone marrow, peripheral blood and fetal liver.

21. (new) The method of claim 20, wherein said population of cells is from umbilical cord blood.

22. (new) The method of claim 20, wherein said population of cells is from bone marrow.

23. (new) The method of claim 20, wherein said population of cells is from peripheral blood.

24. (new) The method of claim 20, wherein said population of cells is from fetal liver.